D R A F T

PRELIMINARY PROVISION/CLAUSE AND CDRL INFORMATION FOR N00173-02-R-JW04

Type of contract: A Cost Plus Fixed Fee type of contract is contemplated.

Government Provided Items – will be expressed in a clause in Section H

Equipment:

A columnar micro-lens defocusing element will be provided by Government - if this is the method chosen for one-point NUC. The separately procured Government lens with piezo-driven micro scan will be provided if requested by the Contractor.

Interfacing Information:

Government will provide interfacing information during the dewar and array readout design phase for the separately procured optics, stabilization and electrical interfacing, controls and networking.

DOCUMENT DELIVERABLES (will be expressed in the CDRL):

The Contractor shall deliver the following documents:

6.1 Financial Reports (Monthly): Provide a brief description monthly of tasks accomplished and funds expended along with a cumulative overview of task and expenditure planning.

6.2 Preliminary Design Review (<2 mo post award): Provide three copies of the presentation materials given at PDR. Include tentative drawings of dewar configuration suggesting internal dimensions and placement of array, cold shield, cooled filter and window; of external uncooled filter wheel; of dewar-to-lens mechanical interface and suggested placement for cryocooler.

6.3 Critical Design Review (<6 mo post award): Provide three copies of the presentation materials given at CDR. Include final drawings of dewar configuration, external uncooled filter and calibration wheels, all details of dewar-to-lens mechanical interface and also electrical and multiplexer designs.

6.3 Production Array Results (14-17 mo post award): Provide test data showing performance results for all array characteristics including well capacity, all noise sources in 100F and 32F backgrounds with both high and low well filling, injection efficiency for the cold background, quantum efficiency, adjacent pixel electronic crosstalk, electronic MTF effects and effective noise carriers referred to the input. Final details of dewar design are subject to Government approval prior to commencement of fabrication. Final design of the uncooled filter wheel is subject to Government approval so as to assure optical compatibility.

6.4 Users Manual (at time of delivery): Describe all controls, functions and output of the array system and give a summary of internal workings.

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HARDWARE DELIVERABLES (will be expressed in Section F):

The Contractor shall deliver the following hardware:

7.1 Leadless Carrier Test Array (14-17 mo post award): Provide sample array for independent NRL performance testing.

7.2 Operational Arrays (15-18 mo post award): Provide three fully operational 2048x512 arrays in sealed dewars with closed cycle refrigerators and with all electronics for control, for output of digital video with status information headers and for timing to the piezo driver.

[Will be expressed in a Section H clause or be covered by a standard clause.] PROPRIETARY PRODUCTS:

All design uniquely needed to meet this statement of work shall after payment become Government property.

[Will be expressed in Section B, describing the options, Section H, terms relating to the options, and Section L, re proposing the options.] OPTIONS:

Option 1: Fast Delivery Schedule: The delivery schedule for one of the 2048X512 arrays is fifteen months from date of award instead of the schedule established in the basic contract.

Option 2: 2560-Wide Vice 2048-Wide Silicon Readout Chips: Deliver two of the three arrays with mating to a fully operational and multiplexed 2560x512 silicon readout chip in an appropriate dewar with adequately sized cryocompressor and with the external filter and calibration wheels optimized for this larger size. If exercised, the objective of this option will be to allow Government to electronically and mechanically fashion an integrated camera payload exactly suitable for future 2560x512 arrays that should become available in a future contract.

Option 3: Additional Procurements: Deliver more fully operational 2048X512 arrays in quantities of up to 12 (counting those delivered in the basic requirement or basic requirement as modified by Option 2) and from 13 to 24 (counting those delivered in the basic requirement or basic requirement as modified by Option 2).

INFORMATION TO BE INCLUDED IN SECTION L

Proposals must include for both the basic requirement and for Option 2, a detailed description of the dewar in which this large-format array must be delivered, whether the design is new or a modification of an existing product, and experience with MTBF for electrical connections, vacuum seal, cryogenics and cooling. Re Option 1, Fast Delivery Schedule: the offeror may indicate other alternative, priced, fast delivery schedules in addition to the fast schedule in the RFP. It is anticipated that any fast delivery option will be exercised at time of award, but the offeror shall indicate requirements for notice prior to exercising such an option(s). Delivery prior to nine months after award is not desired.

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Residual vibrations and line length limitations must be specified in the proposal. Proposals must state clearly the weight, size and shape dimensions of the intended design of dewar, compressor and all electronics boards or packages. Proposals should give both modeling and measurement results of injection efficiency and dark current for the readout circuit being used. Service support will be on a time and material basis: it will be a separately priced and funded continuation after delivery of and payment for the tested arrays.